Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Establishment of Low Power	**)**	**RM No. 11287**
AM Radio Service	**)**	

COMMENTS OF BAYBRIDGE COMMUNICATIONS, LLC

Baybridge Communications, LLC ("Baybridge"), licensee of AM Broadcast Stations KDIA and KDYA, Vallejo, California, by its attorneys and pursuant to Section 1.405 of the Commission's Rules, hereby respectfully submits comments in response to a petition for rulemaking (the "Petition") that proposes the establishment of a low power AM radio ("LPAM") service.[1] The Petition must be rejected because it would increase the amount of interference in the AM band resulting in significant injury to existing broadcasters.

I. The Proposals Advanced in the Petition Would Result in Increased Interference in the AM Band

A. The Petition for Rulemaking Fails to Provide Sufficient Technical Detail

As a starting point, the Petition is so devoid of technical detail that it is nearly impossible to evaluate it in any meaningful way. Although the Petitioners specifically admit that a fundamental principle of the proposed LPAM service is that it "should be unassailable from the standpoint of potential risks of interference with other radio stations,"[2] the Petitioners cannot even agree amongst themselves what the power ceiling

[1] Report No. 2735, October 21, 2005. The Petition was jointly filed by five parties: The Amherst Alliance; The Michigan Music is World Class! Campaign; The LPAM Network; Don Schellhardt, Esq.; and Nicholaus E. Leggett N3NL (jointly referred to herein as the "Petitioners").

[2] Petition at 4.

and channel spacing requirements of such a service should be. In fact, they submit two competing approaches and leave it to the Commission to sort it out.[3] Specifically, The LPAM Network believes that all such LPAM stations "must have *assumed* maximum wattage of 1000 watts (for channel spacing purposes) and *actual* maximum wattage of 100 watts" while the other faction advances an approach based upon case-by-case waivers and varying assumed and actual power levels depending on the location of the station.[4]

Further, as demonstrated in the comments filed in this proceeding by the engineering firm of Hammett & Edison, Inc. (copy attached), it is insufficient to propose only maximum operating powers and suggest that the Commission simply use the "same channel spacing requirements that normally apply to radio stations."[5] Because allocation criteria in the AM standard band is based on contour protection for co-, first-, second-, and third-adjacent protected channels (not distance), use of channel spacing requirements that *normally apply to radio stations* "would effectively render the Petition moot with the exception of a change in Commission Rules to allow for an operating power of less than 250 watts."[6] Moreover, the original allocation of stations in the AM expanded band was based upon distance spacing rather than contour protection and the Commission has not

[3] Petition at 8.

[4] Petition at 9.

[5] Petition at 8.

[6] Hammett & Edison Comments at 2. The firm of Hammett & Edison, Inc. has extensive experience in the AM broadcast field, including many years of providing assistance in the design of AM stations, with applications for Commission authorizations, and on various assessments of station performance, in addition to participating in numerous rulemaking proceedings concerning the AM broadcast service. *See id.* at 1.

yet declared how future stations will be allotted in that band.[7] Thus, utilizing channel spacing requirements that *normally apply to radio stations* in the AM expanded band "would, again, effectively render the Petition moot with the exception of a change in Commission Rules to allow for the operation of non-Model I facilities in the expanded band."[8]

B. Use of Distance Spacing is Inadequate

The Petitioners assert that the channel spacing proposal advocated in an earlier LPAM petition for rulemaking filed by Frederick M. Baumgartner[9] is overly conservative and "would limit unreasonably the potential number of frequencies for LPAM stations."[10] As shown in the Hammett & Edison Comments, the problem with the Petitioners' conclusion is that even Baumgartner's "extremely cautious"[11] distance spacing proposal could result in the interfering contour of an LPAM station blanketing a significant portion of an existing AM station's protected service contour, or an LPAM station being located within the protected contour of a full-service AM station.[12]

Specifically, the Hammett & Edison Comments explain why distance spacing is an inadequate criteria for AM allocations, even if the Petitioners' assumed wattage safety factor of 10 dB is utilized.[13] Propagation of an AM signal is dramatically affected by the ground conductivity value utilized, and because ground conductivity varies substantially

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[7] *Id.* at 2.

[8] *Id.*

[9] RM-10803, October 22, 2003.

[10] Petition at 8.

[11] *Id.*

[12] Hammett & Edison Comments at 3.

[13] *Id.* at 2.

throughout the United States the Commission's Rules allow the use of conductivities between 0.1 mhos and 5000 mhos, depending upon the local soil conductivity of a station.[14] Accordingly, the distance to the co-channel interfering contour for a 100-watt station on 840 kHz broadcasting from a single 65° tall tower can vary from 55.9 km (using a conductivity value of 0.1 mhos) to 656.9 km (using a conductivity value of 5000 mhos).[15] In addition, some high power stations in the standard band that have directional operations have protected 0.5 mV/m contours that extend up to 360 km due to the directionality of the pattern.[16]

Moreover, the Hammett & Edison Comments note that any use of distance spacing as a criteria for LPAM allocations fails to consider nighttime skywave propagation of AM signals and the resulting potential for increased interference in the AM band.[17] Indeed, those Comments state that even operating at only 100 watts, an LPAM station could cause increased interference to full-service stations that are hundreds or even a thousand kilometers away.[18] Further, shorter towers would only exacerbate this problem due to the fact that they have a greater signal generated skyward than taller tower and accordingly present a greater interference risk.[19]

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[14] *Id.*

[15] *Id.*

[16] *Id.* As the Hammett & Edison Comments point out, "approximately 25% of licensed daytime facilities and 42% of licensed nighttime facilities in the standard band are directional operations." *Id.*

[17] *Id.* at 3.

[18] *Id.*

[19] *Id.*

C. The Petition Ignores the Greater Protection of Class A Stations

Although the Petition fails to address the issue, the greater protections accorded to Class A stations must considered when evaluating any LPAM proposal.[20] For daytime operation, the Class A protected contour is the 0.1 mV/m contour while all other classes use the 0.5 mV/m contour.[21] As a result, the protection for Class A stations extends beyond that of other AM stations. And nighttime protections for Class A stations are both more restrictive and calculated differently than other AM stations.[22]

II. Such Increased Interference Would Contradict the Clear Goals of the Commission in Improving the AM Band

In revising its rules for the AM band, the Commission explained that a primary goal of the proceeding was to reduce congestion and interference in the AM band.[23] To accomplish this task, it focused on measures that would revitalize and restore the AM service as a whole, rather than those proposals that would merely benefit unique segments of the industry: "[T]he overall public interest attendant to the revitalization of the AM band outweighs any particular broadcaster's individual perceived needs or desires."[24] Thus, Commission recognized that certain segments of the industry would be dissatisfied, but felt it had to proceed in such a manner to achieve "the revitalization, indeed the survival, of the AM broadcast service."[25] It would directly contradict such

[20] *Id.*

[21] *Id.*

[22] *Id.*

[23] *Review of the Technical Assignment Criteria for the AM Broadcast Service* (R&O), 6 FCC Rcd 6273, 6276 (1991).

[24] *Id.* at 6278.

[25] *Id.*

values to grant the Petition, as it would result in an overall increase of congestion and interference in the AM band merely to satisfy the wishes of one group of broadcasters.

Indeed, the AM standard band is already so congested that were the Petition to be adopted, it is possible that the expanded band may receive the majority of such LPAM stations. The resulting increased interference would conflict with the explicit goals of the Commission in the AM expanded band proceeding. The Commission specifically stated that in order to achieve the goal of creating "a model AM service in the expanded band that will ensure that the full potential of AM broadcasting can be realized" it was adopting "an allotment plan…based on wide station separations and low interference levels."[26] Moreover, as the Hammett & Edison Comments correctly note, it is premature to consider allowing any LPAM stations in the expanded band since the Commission has not yet adopted a final plan for allocation of *full-service* stations within that band.[27]

III. Conclusion

The Petitioners go to great pains to convince the Commission that creation of a LPAM service is necessary to create viable competitors to the "megacorporation" licensees. However, Baybridge is an existing small broadcaster that is already competing with the big players in the industry. As shown herein, the creation of an LPAM service would almost certainly result in increased interference in the AM band and any degradation of the signals of stations KDIA and KYDA would impede the ability of Baybridge to compete with the large station group owners. Moreover, the resulting

[26] *Id*. at 6277.

[27] *See* Hammett & Edison Comments at 4. As those Comments wisely observe, "[p]recluding the allocation of an otherwise allowable full-service station due to the allotment of an LPAM station, particularly in a major market, is a poor use of valuable spectrum." *Id.*

congestion and interference would roll back years of the Commission's efforts to improve and revitalize the AM band.

For the foregoing reasons, Baybridge Communications, LLC requests that the Commission deny the Petition.

Respectfully submitted,

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November 21, 2005

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
The Petition for Rulemaking to Establish	)	MB RM No. 11287
a Low Power AM Radio Service	)	
	)	

To: The Commission

Comments of Hammett & Edison, Inc.

The firm of Hammett & Edison, Inc., Consulting Engineers, respectfully submits these comments in the above-captioned proceeding. This proceeding is the result of the petition filed in August, 2005, by The Amherst Alliance of Michigan, The Michigan Music is World Class! Campaign of Michigan, The LPAM Network of Maine, Nickolaus E. Leggett N3NL of Virginia, and Don Schellhardt, Esquire, to establish a low power AM radio service. Hammett & Edison, Inc., is a professional service organization that provides consultation to commercial and governmental clients on communications, radio, television, and related engineering matters.

I. Qualifications of Hammett & Edison, Inc.

1. Hammett & Edison, Inc., is well qualified to make comments on this matter, its professional staff having been involved for over 50 years with the design of individual AM broadcast stations, their applications for FCC authorization, and various assessments of station performance. H&E has participated over the years in many rulemakings involving the AM broadcast service.

II. Lack of Technical Criteria in the LPAM Proposal

2. The Low Power AM (LPAM) proposal, as put forth for comment, lacks sufficient technical detail regarding allocation criteria to be properly evaluated by any concerned parties. The appendix to the proposal provides only proposed maximum operating power levels, with its Section C indicating that the LPAM service should apply "the same channel spacing requirements that normally apply to radio stations."

3. FCC Rule §73.37 provides the allocation criteria for Standard Band AM stations (540-1600 kHz) which are based entirely on contour protection for co-, first-, second-, and third-adjacent protected channels. No channel spacings based upon distance are provided for Standard

Band AM stations in the FCC rules. Assuming the use of the protection requirements that *normally apply to radio stations* in Standard Band AM broadcasting, as requested in the LPAM proposal, would effectively render the Petition moot with the exception of a change in Commission Rules to allow for an operating power of less than 250 watts.

4. The original allocation of stations in the AM Expanded Band (1605-1705 kHz) was accomplished utilizing distance spacing instead of contour protection; however, the Commission has, thus far, been silent on the issue of how future expanded band stations will be allotted. Assuming the use of the protection requirements that *normally apply to radio stations* in Expanded Band AM broadcasting would, again, effectively render the Petition moot with the exception of a change in Commission Rules to allow for the operation of non-Model I facilities in the expanded band.

III. Distance Spacing is an Inadequate Criteria for AM Allocations

5. Since the use of existing AM allocation Rules appears incompatible with the LPAM proposal, it might be assumed that the Petitioners intend that distance spacings be utilized to demonstrate protection of existing licensed AM stations. However, even utilizing the 10 dB "assumed wattage" safety factor put forth by the Petitioners, distance spacings are wholly inadequate for use in AM allocation criteria.

6. Ground conductivity, which is an essential component in calculating propagation of AM signals, varies substantially throughout the United States. FCC Rules permit the use of conductivities between 0.1 millimhos/m and 5000 millimhos/m based upon the local soil conductivity of a station, determined by either FCC Figure M3 or measured soil data. Propagation of an AM signal is dramatically affected by this value. For example, the distance to the co-channel interfering contour (0.025 mV/m) for a 100-watt station operating from a single 65° tall tower on 840 kHz, can vary as follows:

Conductivity	Distance to 0.025 mV/m Contour
0.1 millimhos/m	55.9 km
30	354.7
5000	656.9

7. Furthermore, approximately 25% of licensed daytime facilities and 42% of licensed nighttime facilities in the standard band operate using directional antenna systems. Some high power (50 kW) stations can have protected 0.5 mV/m contours that, due the directionality of the pattern, extend up to 360 kilometers.

8. The petitioners do not provide actual distance spacings for co-, first-, or second-adjacent channel protection. However, they maintain that the distance spacings proposed in the Baumgartner petition* for LPAM: 225 kilometers for co-channel stations, 150 kilometers for first-adjacent stations, and 50 kilometers for second-adjacent stations, are "so extremely cautious that they would limit unreasonably the potential number of frequencies for LPAM stations." However, as demonstrated above, in many cases the spacings proposed in the Baumgartner petition may actually result in LPAM stations being located *within* the protected contour of a full-service station or with the interfering contour for an LPAM station blanketing a major portion of a licensed station's protected service contour.

IV. Nighttime Interference

9. Again, assuming that the proposed allocation criteria for LPAM is based upon distance spacing, this method fails to take into consideration nighttime skywave propagation of AM signals and the resulting possibilities for increased interference in the AM band. Even at 100 watts operating power, an LPAM station can cause increased interference to full-service stations from several hundred to more than a thousand kilometers away. This problem is exacerbated by the use of shorter towers, such as those proposed in the LPAM petition, which have a greater high-angle signal generated skyward than taller towers and therefore present a greater interference risk.

V. The Proposal Fails to Consider Class A Stations

10. Regardless of what allocation criteria is proposed for LPAM, the Petition fails to make a distinction for Class A stations, which have far more restrictive protection criteria than other classes of AM stations. In particular, the Class A protected contour for daytime operation is the 0.1 mV/m contour versus the 0.5 mV/m contour for all other classes. Therefore, protection extends much farther for Class A stations. Nighttime protections for Class A stations are not only more restrictive, but are calculated by a different method than for other Classes of AM stations. Consideration of the greater protections accorded to Class A stations must be mandatory for any LPAM proposal.

VI. Expanded Band is not Developed Sufficiently to Allow for LPAM

11. The expanded band is currently populated by stations assigned during the initial allocation period. The Commission thus far has not established a plan for the future allocation of stations

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* RM-10803, dated October 22, 2003

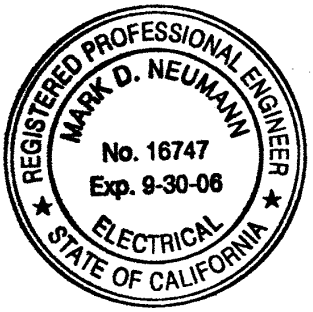
within the expanded band. However, it is likely that there is sufficient open spectrum to allow for the allocation of many more full-service Model I stations within the 1605-1705 kHz band. Adoption of the Standard Band rules for the expanded band would allow for even more full-service stations, with greater interference protection, to be allocated in the expanded band. Until the expanded band has been successfully populated with full-service stations, it would be premature to consider use of this spectrum for LPAM service. Precluding the allocation of an otherwise allowable full-service station due to the allotment of an LPAM station, particularly in a major market, is a poor use of valuable spectrum.

VII. Summary

12. The Commission has asked for comments on the LPAM proposal put forth by the petitioners. However, the proposal is so lacking in technical detail as to present no more than a philosophical question on the appropriateness of an LPAM service. Many questions need to be answered and included in any future proposal before LPAM can be properly evaluated by all concerned parties.

Respectfully submitted,

By /s/ William F. Hammett
William F. Hammett, P.E.
President



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November 18, 2005

CERTIFICATE OF SERVICE

I, G. Hiroko Taguchi, a secretary in the law firm of Womble, Carlyle, Sandridge & Rice, PLLC, do hereby certify that true copies of the foregoing "Comments of Baybridge Communications, LLC" were sent this 21st day of November, 2005 via U.S. Mail, postage prepaid, to the following:

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